
Myocardial ischaemia secondary to intramyometrial injection of methylergonovine maleate

Sir,

Ergonovine is used in obstetric practice and as a diagnostic agent in cardiac catheterisation laboratories. This drug may precipitate acute myocardial infarction due to prolonged coronary spasm.^[1] We report a case of

acute myocardial ischaemia caused by intramyometrial administration of methylergonovine maleate during caesarean section.

A healthy, 28-year-old woman (height 155 cm, weight 76 kg, gravida 2, para 2) at 38 weeks gestation underwent an emergency lower section caesarean section (LSCS) due to scar tenderness of previous LSCS. She had no history of preeclampsia, migraine and risk factors for coronary heart disease such as smoking, diabetes mellitus, hypertension, hyperlipidaemia and obesity. Spinal

anaesthesia was administered with a 25-gauge needle at L3-L4 interspace with 12 mg of 0.5% of hyperbaric bupivacaine. After the delivery of the foetus, despite uterine massage, continuous intravenous oxytocin infusion and intramuscular carboprost (15-methyl-PGF₂α) 250 µg, the uterus remained atonic. In a desperate attempt to achieve uterine contraction, the obstetrician gave a single intramyometrial injection of 0.2 mg methylergonovine maleate. Immediately, patient's blood pressure (BP) increased from 126/84 mm Hg to 164/104 mm Hg. Heart rate (HR) increased from 86/min to 104/min. Electrocardiogram (ECG) revealed sinus rhythm and oxygen saturation remained 100%. In next 5 min, patient's BP increased to 190/116 mm Hg and HR to 120/min. She started complaining of headache, substernal chest pain and developed laboured breathing. Chest auscultation revealed bilateral crepitations and ECG now showed non-specific T-wave abnormalities with ST-segment elevation. Patient was immediately intubated, and mechanical ventilation with positive end-expiratory pressure was started. Injection furosemide 20 mg was given, and nitroglycerine infusion at 5 µg/min was started. Uterus, by now, had contracted and wound closure was done. The patient was transferred to Intensive Care Unit for mechanical ventilation and monitoring of her vitals. Immediate post-operative X-ray chest showed pulmonary oedema. Subsequently, BP started stabilizing towards normal values and ECG changes reverted to normal rhythm. Chest became clear by the end of 3 h. Creatine phosphokinase and troponin levels were within normal limits. The patient was extubated after 8 h and shifted to post-operative room.

Despite the frequent usage of methyl ergonovine maleate for routine management of the third stage of labour and post-partum atony, cardiac complications of this drug have rarely been reported.

The risk factors for coronary artery spasm by ergot derivatives are Asian origin, age >30, smoking, family history of ischaemic heart disease and history of migraine.^[2]

Although other conditions such as oesophageal spasm are known to mimic angina and are accompanied

by non-specific ECG changes, the onset of clinical symptoms and ECG changes immediately after intramyometrial administration of methyl ergonovine suggest cardiac aetiology (coronary vasospasm).^[3]

The recommended mode of administration of methylergonovine maleate in the post-partum period is intramuscular. Intravascular (IV) or intramyometrial route is not recommended. Intramyometrial injection leading to myocardial ischaemia has been reported rarely.^[3] Because the myometrium is a highly vascular tissue, the intramyometrial injection of methylergonovine maleate might behave as an IV administration of drug.^[3] IV injection can cause hypertension, myocardial infarction, acute heart failure, pulmonary oedema, cerebral haemorrhage and retinal detachment.^[4] If IV administration is considered essential as a life-saving measure, injection should be given in incremental doses with careful monitoring of BP and ECG.^[5] Nitroglycerine was successfully used to reverse ergonovine-induced coronary spasm. It also prevents subsequent development of myocardial ischaemia and infarction.^[3]

Thus, intramyometrial injection of ergonovine is not to be encouraged as it can cause coronary artery spasm in obstetric patients. Prompt evaluation and management may prevent or reduce the morbidity or mortality caused by this drug.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

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Access this article online	
Quick response code	Website: www.ijaweb.org
	DOI: 10.4103/0019-5049.179471

How to cite this article: Jain S, Baghel K. Myocardial ischaemia secondary to intramyometrial injection of methylergonovine maleate. *Indian J Anaesth* 2016;60:290-2.